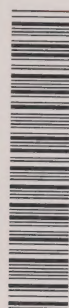


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Dynamics

OF LABOUR AND INCOME



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9 4 R E P O R T

**First results from the Survey of
Labour and Income Dynamics**

Measuring work experience

Update on gender wage gaps

Following life events

Educational mobility

Employment equity



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Dynamics

OF LABOUR AND INCOME

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Note of appreciation

Canada owes the success of its statistical system to a long-standing co-operation involving Statistics Canada, the citizens of Canada, its businesses and governments. Accurate and timely statistical information could not be produced without their continued co-operation and goodwill.

Foreword

The Survey of Labour and Income Dynamics (SLID) is a new longitudinal survey at Statistics Canada. By following the same people over time, longitudinal surveys offer great analytical opportunities. The articles in this report will give a flavour of the survey's potential. They are intended for anyone interested in labour market issues and social change.

SLID's purpose is to fill a gap in the social statistics program, namely, information on labour market and income flows. What happens to workers when they lose their job? How do they adjust and what are the impacts on the family? Do families often go through abrupt changes in income? Are low income families generally caught in a trap or do many succeed in improving their economic situation? How do they do it? The need for answers to questions like these – which all concern changes people are experiencing in their economic well-being – has grown in recent years.

Past household surveys have helped to draw attention to the importance of the dynamic features of the labour market. As far back as 1979, Statistics Canada was conducting surveys designed to capture movement in the labour market, to convey some sense of the dynamics. The results of the first Annual Work Patterns Survey were startling: 22% of those in the labour force at some time during 1978 experienced a spell of unemployment – and yet the annual average unemployment rate that year was only 8%.

These and other results showed that the labour market was far from static, and helped to fuel research on labour market dynamics. Expertise in the measurement of labour market flows grew during the 1980s. Employment and Immigration Canada sponsored the Labour Market Activity Survey (LMAS), monitoring employment and unemployment dynamics from 1986 to 1990. LMAS served as a model for SLID. The chief content shortcoming in LMAS was its lack of family income data and this gap is now filled – SLID has income information similar to Statistics Canada's annual Survey of Consumer Finances.

An important aspect of SLID is a background interview (called the "preliminary interview"), conducted when the sample for a panel is first selected. One year later, an annual cycle of labour and income interviews begins. In all, six "waves" of labour and income data are collected for each panel.

The preliminary interview with the respondents of SLID's first panel took place in January 1993. The information collected at that time includes demographic and cultural traits, family history, educational attainment, current work activity and work experience. The first annual wave of labour and income data – the main substance of the survey – was collected in 1994. As this publication goes to print, the first wave is being processed. So while those results are not yet ready, we can share some of the background information gathered in the preliminary interview.

This collection of short articles offers readers a chance to become acquainted with the content and design of the survey before the first wave of data is released later in 1995. The articles also highlight some variables not often found in large-scale household surveys.

The authors of these articles are working on the development, collection and (soon) dissemination of SLID data. We wish

to thank all members of the SLID team, including the survey operations staff, the interviewers, the systems group, the methodology group and the survey's respondents for their part in collecting and preparing the data. We are also very grateful to the *Perspectives on Labour and Income* team for providing their expertise and helping us to produce this report. □

Highlights

The Survey of Labour and Income Dynamics (SLID) first contacted respondents in January 1993 – a starting point for the events and changes the survey will track over the coming years. Following a description of the survey, five studies present a selection of findings from this first interview.

The work experience of Canadians: A first look

A person's lifetime work experience, beginning with the first full-time job, can be counted in equivalent full-year, full-time years. Using this yardstick:

- The work experience of men and women approaching retirement age, that is, aged 60 to 64, averaged 27 years – or about 57% of their adult life. The average experience of all persons aged 15 to 69 was 14 years.
- Below age 30, women and men had approximately the same level of work experience. In contrast, the average experience of women aged 55 to 69 was less than half that of men.
- The paid work experience of women aged 45 and older who had raised children was 15 years, compared with 27 for those who had not.
- For two people of the same age, the one with more education has less potential work experience, simply because he or she stayed in school longer. If one controls for this difference in potential, work experience increases with level of education.

Following life events

SLID will trace demographic events over six years. As a starting point, the preliminary interview collected information on marital and family history. A selection of demographic results illustrates the more unusual variables:

- Among 25 to 34 year-olds, 55% were married and 12% were living common-law in January 1993. About half of the marriages had lasted six years or longer. For those living common-law, only one-quarter had been together that long.
- An indicator of long-term interprovincial mobility can be obtained by combining a person's province of residence with the province of education. In 1993, over 50% of British Columbia's residents aged 25 and over had moved to the province some time after receiving their basic education. In Newfoundland, the proportion was only 3%.
- The schooling level of childless women aged 25 to 49 is similar to that of women who were "mature" (aged 30 or over) when their first child was born. These two groups differ sharply from women who were "young" (below age 22) when they first gave birth –

37% of young first-time mothers did not complete high school, compared with 8% of mature first-time mothers and 11% of childless women.

■ About 5% of women 18 and over have adopted children or raised children not born to them.

Intergenerational change in the education of Canadians

Against the backdrop of a general rise in education, some people surpass their parents' level of schooling and others fall short. The extent of these movements is a possible indicator of social mobility.

■ Two people in three have surpassed the attainment level of their parents; less than 10% have lost ground.

■ A person's educational level appears to be just as dependent on the mother's schooling as on the father's.

■ About 14% of individuals under 40 fell short of their parents' level of schooling, compared with only 9% of the generation aged 40 to 64.

SLID employment equity data

Despite small numbers, estimates for two designated groups – visible minorities and Aboriginal peoples – are similar to results from the census:

■ In the survey's target population – the 10 provinces, excluding the population living on reserves and institutionalized persons – an estimated 8% of people aged 15 and over were visible minorities. This is close to the 1991 Census estimate of 9%.

■ The survey estimated the number of Aboriginal peoples aged 15 and over living off-reserve in the 10 provinces at 539,000, compared with 509,000 in the census.

■ The age structure of both designated groups was comparable to census results.

■ At 70%, the labour force participation rate of visible minorities was virtually the same as the average for the whole population; for off-reserve Aboriginal peoples, it was slightly lower, 65%.

■ However, both designated groups had above-average unemployment rates in January 1993: 16% for visible minorities and 18% for Aboriginal peoples, against 11% for the population as a whole.

The wage gap between men and women: An update

Recent studies show that the wage gap between men and women is shrinking. In the case of recent university graduates, it has closed completely. But for the workforce as a whole, the gap remains sizeable – even after taking into account such factors as education level, field of specialization, years of work experience and hours worked.

■ Based on average hourly wages, the ratio of female-to-male wages was .78. Only 12% of the wage gap is explained by gender differences in education, work experience and demographics.

■ Women with degrees in education and those with degrees or diplomas in health help to reduce the gap, because these fields have both high wages and high concentrations of women. □

Survey of labour and income dynamics: An overview

Maryanne Webber

As its name implies, this survey's purpose is to measure movement – to map out patterns of labour market activity and changes in income, and to record the events that trigger these changes. To achieve these goals, SLID will follow respondents for six years. SLID will be the first household survey ever to provide national data on the fluctuations in income that families experience through time, which in turn will support research on the nature and extent of poverty in Canada. Unlike some panel surveys, data are collected on all household members, to capture important family events occurring over the six years.

Design features

SLID is a household survey. The sample for the first panel was drawn from the Labour Force Survey (LFS). The LFS uses an area sample and covers the population of the 10 provinces, with the exception of Indian reserves, the military and inmates of institutions. The coverage of the original SLID sample is identical, with one small difference: SLID includes Armed Forces personnel living out of barracks.

Once a panel is selected, it will be retained for six years. In that time, 13 interviews will be done: a preliminary

interview at the point of sample selection to collect background information, plus 6 labour interviews (every January) and 6 income interviews (every May). The labour and income interviews both refer to the previous calendar year.

SLID is intended to continue indefinitely, so panels will periodically be replaced to refresh the sample. The panels will overlap. The first one was selected in January 1993, when the preliminary interview was conducted. (The first wave of labour and income interviews for this panel was completed in 1994.) The second panel will start up in 1996. In 1999, the third panel will begin and the first panel will be "retired" (Figure).

The size of the first panel is 15,000 households. This includes about 31,000 persons aged 16 and over who answer questions about their work and income during the previous year. The second panel will probably be similar in size.

Following rules

Following rules govern who is traced and who is interviewed in a panel survey. In SLID, all household members in the dwellings originally selected for the survey will be followed for six years, even if they move and form two or more separate households. These originally selected individuals are called *longitudinal respondents*. In addition, persons who join the household of a longitudinal respondent

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during the six years (called *cohabitants*) are interviewed, as long as they continue to live with a longitudinal respondent. Children are followed as well as adults.

Both longitudinal respondents and cohabitants complete labour and income questions, as long as they are 16 or older on January 1 of the survey year. Respondents who turn 16 after the start-up of the panel become eligible for the labour and income interviews. Indeed, when they turn 15, they complete a preliminary interview in preparation for the following year's labour and income interviews.

The May interview is not a distinct wave but is, rather, deferred from January because income data are of better quality when respondents can consult their tax records. The fact that the January and May interviews are conceptually part of the same wave has implications for the following rules. For example, cohabitants who cease living with a longitudinal respondent between January and May are nevertheless traced and interviewed in May, to obtain the income data (which refer to the previous year). Only then are they dropped from the sample.

Operational features

The data are collected using computer-assisted interviewing (CAI). Data collection is decentralized: interviewers generally work out of their own homes, conducting interviews by telephone and transmitting data to the nearest Statistics Canada Regional Office by modem. (As a security feature, survey information is encrypted during transmission.) Proxy reporting is accepted, as long as the proxy respondent is knowledgeable. Otherwise, the interviewer arranges a call-back.

SLID is designed for a CAI environment and exploits CAI's potential for improving data quality. For example, there are many dates to collect in the course of a labour interview – dates worked, dates of jobless spells, absences from work and so on.

CAI allows us to compare these dates as they are reported, and to query apparent gaps or inconsistencies. This interactive editing of dates results in much cleaner data.

CAI also makes it easier to use dependent interviewing – that is, to feed back information reported in the last interview to improve recall. "Seam problems" can occur in a survey like SLID because respondents sometimes have trouble recalling the start and end dates of jobs, work absences and so on over a one-year period. These recall errors can cause an artificially high proportion of spells starting or ending at the "seam" between two adjacent reference periods. Seam problems can be reduced by feeding back some of the information collected in the last interview. This procedure is far easier in a CAI environment. CAI also allows us to check for logical inconsistencies between information collected in the labour interview and, a few months later, in the income interview. The interviewer can then probe for clarification.

Finally, the CAI system maintains a list of all persons the respondent has lived with since the start of the panel. If, several years into the panel, an apparently new cohabitant moves in, the interviewer checks the list of all former household members to see if this is in fact a "returner." (This may seem like a small operational detail but the task of distinguishing returners from truly new household members can be surprisingly troublesome.) A similar approach is used within the labour interview, to distinguish truly new employers from employers the respondent is returning to after what appeared to be a permanent separation.

Major research themes

This survey will support social and labour market policy research. The following are some of the main research themes, based on discussions with prospective data users and on the experience of other panel surveys with similar content.

Employment and unemployment dynamics:

This refers to movements in the labour market, recorded at the level of the individual, and includes gross flow and job turnover studies. SLID will also be used for studies on the concentration of unemployment. Is unemployment experienced repeatedly by the same individuals? What are the major causes of labour market withdrawal? What precedes a transition into self-employment?

Life cycle labour market transitions: These are major labour market transitions associated with particular stages of the life cycle, including transitions from school to work, transitions from work to retirement and work absences taken to have or raise children.

Job quality or quality of working life: SLID will be able to support research in such areas as gender wage gaps, under-employment, occupational mobility, earnings growth, wage and hours polarization.

Family economic mobility: How stable is family income? What proportion of families experience an improvement or deterioration in income between two points in time? What are the determinants of change? How important are changes in family composition (divorce, remarriage) in explaining a change in economic well-being?

Dynamics of low income: This research theme concerns the incidence and duration of spells of low income, and the determinants of flows into and out of low income. What proportion of the low income population is "persistently poor"? What distinguishes this group? Of interest also will be flows into and out of low income experienced by recipients of Unemployment Insurance and Social Assistance.

Variables

Fixed variables, not inherently subject to change, are collected only once in the survey. Date of birth and ethnic origin are examples. *Annual variables* are year-specific and refer to the year as a whole; for example, annual income from a particular source, or number of weeks employed during the year. For annual variables, the data for a full panel will consist of six observations. *Dynamic variables* reflect a state (a labour market spell, a marital status, time spent in a particular occupation). Spells may be very short (an unemployment spell or work absence may last only one week) or they may outlive the panel. Start and end dates are attached to spells, and durations can be easily derived. Spells can begin in one year and carry over into the next.

The variables can be grouped into 14 categories. The following is a selection of the variables in each category.

- *Demographic and cultural variables:* basic demographics, when first married, number of children, ethnic origin, member of an Employment Equity designated group, parents' schooling, mother tongue
- *Geography and geographic mobility:* economic region or census metropolitan area of current residence, size of community, moved during year, move dates, reason for move, nature of move (full household/household split)
- *Household characteristics:* annual summary information at household level (for example; size, type); key characteristics of other individuals in household (for example; age, sex, relationship, income, annual hours worked)

- *Economic family characteristics and events*: family size and type, family income, family events (separation, death, birth)
- *Educational attainment and educational activity*: years of schooling, degrees and diplomas, major field of study (updated annually), enrolled in a credit program, type of institution, full-time or part-time student, months attended
- *Work history*: years of full-time and part-time employment (updated annually)
- *Nature and pattern of labour market activity*: spells of employment and unemployment (start and end dates, durations), annual labour force status, employer spells (number of employers in year and dates of attachment), total weeks of employment, unemployment and inactivity by year, multiple jobholding spells, work absence spells
- *Job characteristics*: wage, work schedules, benefits, union membership, industry, occupation, supervisory and managerial responsibilities, class of worker, tenure, firm size, how job was obtained, reason for job loss – all characteristics updated each year, with dates of changes recorded; information covers up to six employers per year
- *Characteristics of work absences of one or more weeks*: dates, reason, paid or unpaid, etc. – details on first and last absence each year, for each employer
- *Characteristics of jobless spells*: job search during spell, dates of search spells, desire for employment
- *Receipt of compensation*: received Unemployment Insurance during year (if so, which months), same information for Social Assistance and Worker's Compensation

Household relationships

This survey could be called the Survey of Labour, Income *and* Family Dynamics. Many researchers are interested in the respondent's family context – the living arrangements, family income, and so on. One important variable is household relationships: how is the respondent related to the other people in the household?

This variable is often collected in household surveys. The approach is usually to describe how household members are related to one specific reference person. The survey may have rules for picking a reference person, or the respondent may pick any person at random.

In SLID, a different approach has been adopted. Instead of relating all persons to one reference person, the survey asks explicitly about the relationship among all members of a household. This approach will provide better information on complex family structures – for example, blended or multigenerational families – which can help in understanding family dynamics.

- *Activity limitation*: annual information on activity limitations and their impact on working, satisfaction with work
- *Income*: annual information on about 25 sources of income plus total income and taxes paid, relevant low income cut-off
- *Assets and debts*: information may also be collected once or twice in life of panel on roughly 20 asset and debt categories

Units of analysis

Not all studies will require the same unit of analysis. In addition to questions about individuals, studies may be based on spells (for example, unemployment spells) and "person-jobs." For a given individual, there may be multiple spells. One can attach the characteristics of the person to the spell (for example, unemployment spells experienced by young women who have not completed high school).

In SLID, information covers up to six employers per year, since a person may cycle through several jobs or hold two or more jobs concurrently. Each spell of attachment to an employer is characterized by a wage rate (which may change during the spell), an industry, an occupation and so on. To analyze this information, researchers may have recourse to the "person-job," in which all jobs (as opposed to a dominant one) are included. The researcher may weight these person-jobs by the amount of work done over the course of the year.

Family or household data will be central to many SLID studies. However, families and households are dynamic and it is difficult to treat them as longitudinal units of analysis – what does one do with families whose composition changes during the study period? To deal with this difficulty, it is best to treat the individual as the unit of analysis and to analyze individuals in light of their family characteristics. Thus, instead of analyzing *blended families*, one would look at *individuals belonging to blended families*.

Data processing and weighting

To render the data more useful to analysts, some processing is required: editing to identify logical inconsistencies, setting procedures for handling missing data, and weighting to make the sample representative of the population.

We can compensate for missing data by increasing the weights of other respondents, by imputing information from various sources, or by assigning a "don't know" value to a variable. A combination of these methods will be used in SLID.

If the six years of data are viewed as a whole, certain common non-response patterns can be expected. For example, a given individual may

- not participate at all in the survey
- complete all labour interviews but never provide any income information

- respond to every income interview but never to labour questions (for example, seniors who winter in Florida)
- miss a full wave (both labour and income) because of an absence or a move, but participate in a subsequent wave.

Research on how to compensate for non-response is still underway, and our approach has not yet been made final.

There will be two types of weight for each respondent. The longitudinal weight reflects the person's initial probability of selection into the panel. As such it is representative of the population in January 1993. Only longitudinal respondents have a longitudinal weight. This weight is adjusted every year to compensate for non-response in the originally selected sample. The weights will always sum to the population as of January 1993.

The second weight is cross-sectional. Both longitudinal respondents and cohabitants carry cross-sectional weights, which sum to the population in January of the survey year. There will be a cross-sectional weight for each year, which will allow time series analysis. They may also be used in studies focusing on a single year.

Data quality measurement

Because of their complexity, panel surveys pose some interesting challenges for data quality measurement. The standards and frameworks that exist for evaluating quality relate in general to cross-sectional surveys, and require adaptation. A vigorous program of data quality measurement is being developed for SLID.

Data quality studies will be designed to measure response, evaluate response error and the impacts of computer-assisted and dependent interviewing, and compare SLID results to benchmark data from tax files, the Labour Force Survey and other sources.

Access to SLID data

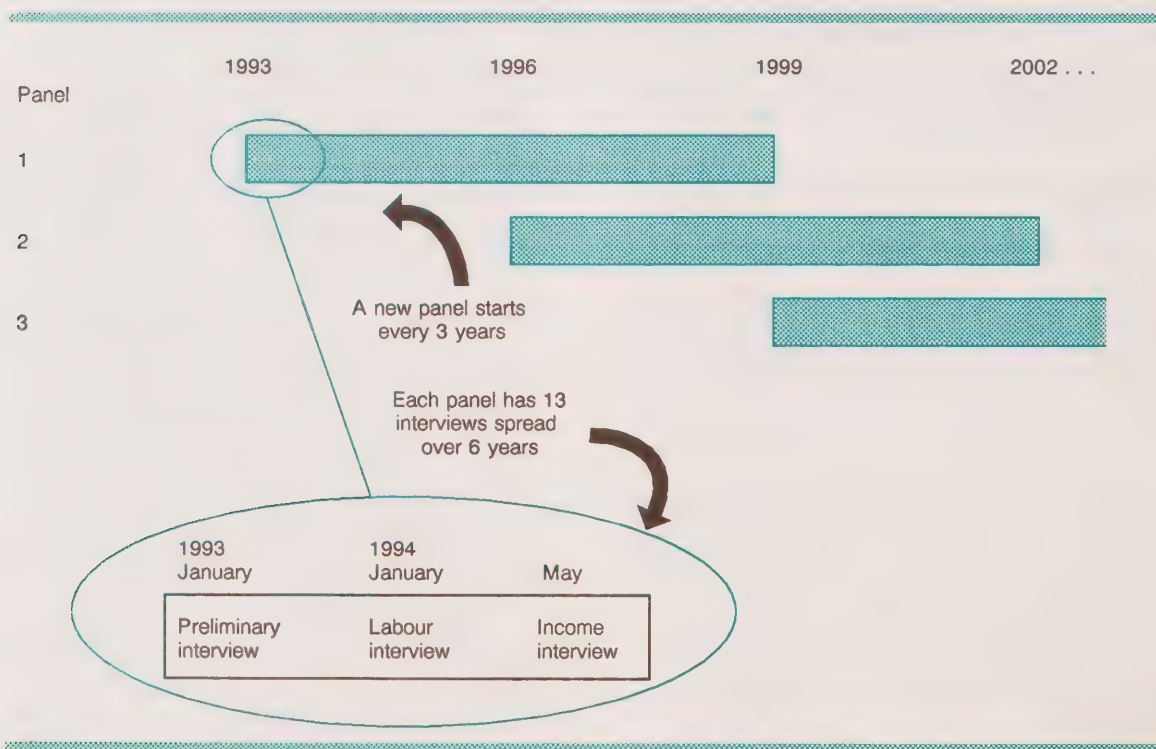
The first microdata will be available in 1995. This file will contain data from the preliminary interview conducted in January 1993 and information from the first wave of labour and income interviews conducted in January and May 1994. When the microdata file is released, a companion publication will be available to help data users get started.

Every year, a new microdata file will be released containing all the data collected up to that point, therefore replacing the previous year's file.

For further information

The survey developments have been well-documented. A free quarterly newsletter, *Dynamics*, can be obtained on request. There is also an extensive set of research papers describing various features, issues and decisions since 1992. The list of titles in this series is presented in the appendix. For further information contact Anne Palmer at Survey of Labour and Income Dynamics, Statistics Canada, Jean Talon Building, 11th floor D8, Ottawa K1A 0T6. Phone: (613) 951-2903. FAX: (613) 951-3253. Internet users can contact Philip Giles: giles@statcan.ca. □

Figure
Survey design



The work experience of Canadians: A first look

Heather Lathe and Philip Giles

Work experience is an important component of human capital, yet data on this topic have not been available on a national level for all working-age adults until now. Starting from a person's first full-time job, SLID determines how long an individual has worked, either full time or part time (see *Sizing up experience and education*).

What are the differences between people of different ages, men and women, people in different fields of work and with different levels of education? These questions can now be answered for the broad population of working age, defined here as people aged 15 to 69.

First-time figures for the population

As expected, work experience increases substantially with age. In 1993, 20 to 24 year-olds had an average of 1.8 years of experience (full-year, full-time equivalent), while people approaching retirement age (60 to 64) had 27.0 years, representing about 57% of their adult years. Even small differences in age can have significant effects on results when comparing population sub-groups.

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Age distributions aside, of all adults aged 15 to 69, 26% had worked more than 20 years in full-year, full-time equivalents (Table 1). Almost 40% had between 6 and 20 years' experience, while 16% had worked 5 years or less since starting full time. Approximately one in five working-age adults had never worked full time (excluding summer jobs while in school).

Table 1
Population aged 15 to 69, by sex, years of experience and full- or part-time work, 1993

	Total	Men	Women
	%		
Total	100.0	100.0	100.0
Never worked full time	19.0	14.7	23.4
Some full-time experience	81.0	85.3	76.6
Years of experience (full-year, full-time equivalent):			
5 or less	15.9	12.3	19.6
6-10	14.8	12.0	17.7
11-15	12.9	12.4	13.4
16-20	11.5	12.5	10.5
21-25	7.7	9.0	6.4
26-30	5.6	7.5	3.7
Over 30	12.5	19.5	5.2
With/without part-time experience:			
Some part-year or part-time*	23.3	16.2	30.6
Only full-year, full-time	57.7	69.1	46.0

* Includes years with a mixture of full- and part-time work.

Sizing up experience and education

Work history begins with the respondent's first full-time job. Work prior to that time, such as previous part-time work or summer jobs while in school, is not considered because respondents might have difficulty recalling such information accurately. It might also pose a challenge for respondents reporting on behalf of other household members. Therefore, the survey does not measure part-time experience for the 15% of men and 23% of women who have never worked full time. The effect of this exclusion is not as great as it would be if part-time jobs had always had the same share of employment as they do now.

Based on the number of years since respondents first started working full time, the survey asks how many years they had worked at least 6 months (recorded as full years) or not at all. The remaining years are recorded as part years worked. For years during which they had worked 6 months or more, respondents are asked whether they had worked full time, part time, or both, at different times during the year. Full time is defined as 30 hours or more a week.

To arrive at full-year, full-time equivalents, the survey values one year in each category of work history as explained below. Note that users of the SLID microdata file will be able to value part-time and part-year work differently if they prefer.

	Full-year, full-time equivalent
Full year, full time (6 months or more, 30 hours per week or more)	1
Full year, part time (6 months or more, under 30 hours per week)	0.5
Full year, some full time/some part time	0.5
Part year (less than 6 months), whether full time or part time	0.25

For example, if someone had first started working full time 15 years ago and since then had worked 6 years full time, for at least 6 months each year, plus 5 years full time but less than 6 months each year, plus 4 years part time for at least 6 months each year, he or she would have 9.25 years' experience ($6 \times 1 + 5 \times 0.25 + 4 \times 0.5$).

SLID's educational attainment variable has 15 categories, ranging from "never attended school" to "doctorate." The variable on years of schooling is derived from questions on number of years completed in three school categories: elementary and high school; community college, technical institute, trade or vocational school or CEGEP (i.e., non-university postsecondary); and university.

The proportion of valid answers obtained for all work history variables was 86.3%;¹ only these observations were used in the analysis.²

Overall, the total population aged 15 to 69 in 1993 had worked an average of 13.6 years in full-year, full-time equivalents. Average experience may increase over time with the current aging of the population, which is slowly raising the average age of people still in their working years.

The male-female experience gap

The average paid work experience of men in 1993 was 17.1 years, while for women it was 10.1 years (Chart). Women in the youngest age cohorts had almost the same experience as their male counterparts, but for each older cohort the experience gap grew. For example, men aged 60 to 64 had on average 22 years more experience than women; for each age group starting at ages 55 to 59, the average experience of men was at least double that of women.

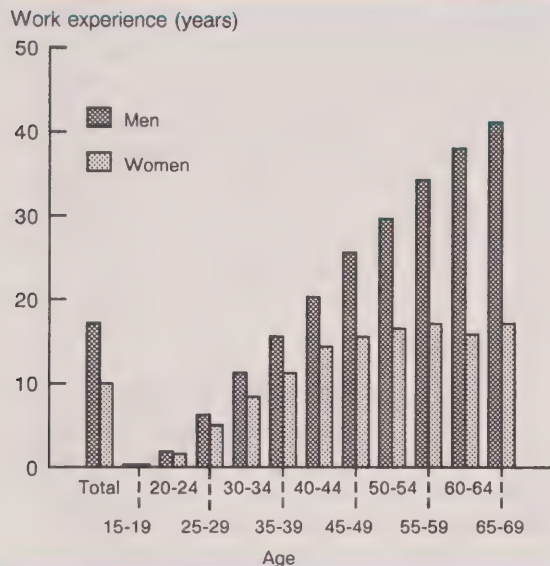
Labour force patterns have changed considerably over the past few decades, and the SLID results reflect this. The participation rate of women was just 23.4% in 1953; since then it has risen to 44.4% in 1975 and 57.5% in 1993.³ Over the same period, men's participation has fallen, from 82.9% in 1953 to 73.3% in 1993. Older women are participating more in the workforce than before, but women aged 25 to 54 have made the greatest contribution (Basset, 1994).

Parenting often interrupts women's participation in the labour force. The paid work experience of women 45 and over who had had or raised children was 15.4 years, compared with 26.5 for those who had not (Table 2).

Eventually, women's average experience will approach that of men, as the younger generation's work patterns replace

Chart

Over age 55, men have at least twice as much work experience as women.



those of the older generation, but this will happen slowly. New trends in men's work patterns could also narrow the gap – for example, earlier retirement among men, and men leaving paid work for parenting.

Current labour force status

People in the labour force are working or looking for work. The average experience of people aged 15 to 69 in the labour force in 1993 was 14.5 years, compared with 11.6 years for those not in the labour force (whose average age was 4.6 years older). For women – though not for men – the effect of excluding those not in the labour force is substantial: it adds from around 1 extra year of experience for women in their thirties to 6 extra years for women aged 60 to 64.

Full- and part-time work

Eight in ten adults aged 15 to 69 had some full-time work history and therefore some work experience as defined by the survey.

They had worked at least part of the year for 18 years on average (Table 3). In only two of those years had they worked either part time or for under 6 months. For just those adults with some part-time experience complementing their full-time work history (29% of those with some full-time experience), full-time work was still more important than other work; of a total of 17 years worked on average, almost 10 were full-year, full-time.

Occupations and industries

Unlike job tenure, work experience of people currently in specific occupations or industries includes total work history, irrespective of the number of changes of employer or area of work.

Such experience may reflect the sets of skills required to obtain jobs in certain occupations or industries. For example, managerial and administrative occupations are "high" experience while clerical, sales

Table 2
Average years of work experience of men and women, by age, 1993

	Average	
	Years of experience (full-year, full-time equivalent)	Age
Total population aged 15-69	13.6	38.3
Men	17.1	38.2
Women	10.1	38.5
Under 45		
Men	9.6	29.9
Women	6.9	29.7
45 and over		
Men	32.7	55.4
Women	16.5	56.2
who have had or raised children	15.4	56.1
who have not had or raised children	26.5	56.9

Table 3
Average years of full- and part-time work experience, 1993

	Total *	Average years worked		
		Full-year, full-time	Part-year or part-time**	Full-year, full-time equivalent
Total population aged 15-69	14.5	12.9	1.7	13.6
With some full-time experience	17.9	15.9	2.1	16.8
Also some part-year or part-time**	16.7	9.5	7.2	12.9
No part-year or part-time**	18.4	18.4	...	18.4

* Totals may not add due to rounding.

** Includes years with a mixture of full- and part-time work.

... Figures not appropriate or not applicable.

and service occupations are "low" (Table 4). The work experience of employees in the three service industries is also low. In addition, lower experience may reflect fields that have grown more in recent decades – for example, service industries compared with goods-producing industries. Some traditional industries, such as agriculture, other primary, and to a lesser extent manufacturing, have workers with higher-than-average experience. More study of the experience of workers in various fields would complement research already undertaken on types of jobs in Canada.

Level of education

Without controlling for the number of years spent in school, one finds no clear difference in the work experience of people with higher or lower educational levels. For instance, both people with a master's degree and people with only 1 to 4 years of formal education have on average 15 years' experience. However, people with higher educational levels have acquired more experience relative to their "potential" experience, which takes into account the extra time it took to acquire more education.

This conclusion was obtained using an estimate of time *not* spent in school ("potential" experience) computed as: age

minus years of schooling minus five years (see *Mincer's measure*). The average difference between potential and actual work experience was 2 to 3 years for respondents with any university education and 5 to 8 years for those with any non-university postsecondary education or graduation from high school. The minor difference for people with a master's degree or higher – under 2 years – may reflect not only fairly steady careers upon completing school but also a higher occurrence of full-time work before finishing their qualifications.

In contrast, the actual work experience of people with under 9 years of schooling was far lower than their potential experience, by an average of 19 years or more in each category. This may reflect higher unemployment rates in addition to lower, participation rates, although it results partly from the overestimate of potential experience for people who left school when they were very young. Also, people in each of these attainment categories are roughly 10 years older on average than those with higher levels of attainment. Nevertheless, across the whole range of qualifications, it is clear that people with higher levels of education have come closer to fulfilling their potential work experience defined this way than have people with lower educational attainment.

Table 4
Average experience of workers by
occupation and industry (full-year, full-
time equivalent), 1993

	Average years
Occupation	
Religion	25
Mining	21
Transport equipment operating	19
Managerial and administrative	18
Machining	17
Construction	17
Farming	17
Fabricating	16
Other crafts and equipment operating	16
Forestry	16
Processing	16
Fishing	15
Teaching	14
Natural science, engineering and mathematics	13
Medicine and health	12
Sales	12
Clerical	12
Social science	12
Material handling	11
Service	10
Artistic, recreational and literary	9
Industry	
Transportation	19
Agriculture	18
Other primary	17
Utilities	17
Public administration	16
Manufacturing	16
Construction	16
Finance, insurance and real estate	15
Communication	15
Community service	13
Trade	12
Miscellaneous service	12
Business and personal service	10

Summary

Accumulated work experience over a person's lifespan affects his or her employability and remuneration and, in the aggregate, the productivity of the labour force. The average experience of all adults 15 to 69 was 13.6 years in 1993, summarized in full-year, full-time equivalents; for those currently in the labour force it was 14.5

Mincer's measure

Proxy estimates of experience based on age and education are sometimes used in research requiring work experience information when survey data are unavailable. Mincer (1974) suggested a measure of "potential" experience defined as age minus years of schooling minus a constant equal to the preschool years. The table shows the distribution of men and women according to the difference between their actual experience (whether zero or greater) and their potential experience (using a constant of five). A negative result is possible if the individual began working full time and continued or resumed studies while working.

The approximation of work experience with potential experience would appear reasonably good for men (an increase in the constant by about two years would bring the whole distribution closer to zero). However, for women, the relatively flat distribution – which simply reflects the diversity of women's experience even within age groups – illustrates the likely inadequacy of any simple measure based on age and years of schooling to approximate their actual experience.⁴

Potential minus actual work experience of men and women aged 15-69, 1993

	Men	Women
	%	
Potential minus actual experience (years)		
Total*	100	100
40 and over	1	7
20 to 39	3	15
10 to 19	7	17
5 to 9	13	15
3 to 4	16	10
1 to 2	33	21
0	14	10
-1 to -2	10	5
-3 and less	4	2

* Totals may not add due to rounding.

years. These figures will rise in future with the "greying" of the labour force. However, less certain is whether experience will continue to be correlated with productivity, wages and employment in exactly the same way.

Since this is the first time that data on the topic are available on a national level for all working-age adults, this study takes a look at some chief characteristics in relation to work experience, including age, sex, industry and occupation, and education. Other variables of possible interest are province of residence, mother tongue, immigrant status, marital status, age at first marriage, and the age of mothers when they began having children.

Over the longer term of SLID, work experience will enter into studies on work

and unemployment spells, to explain the ease of changing jobs, for example. Before too long, it will be possible to compare respondents' experience with their supervisory roles at work, job tenure, pension prospects and the timing of retirement. Another article in this report shows that work experience is an important explanatory variable for differences in wage rates between men and women. The striking contrast between the paid work history of men and women should shed light on other labour market issues as well. □

Notes

¹ The fairly high proportion (13.7%) of unknown or invalid answers to the composite work experience variable requires some explanation. It is possible that in completing the paper questionnaire interviewers mistakenly left the first question on work history blank, if the respondent reported never having worked full time, rather than checking the appropriate box. This oversight would have resulted in all remaining work history questions being coded zero. A slight pattern among the characteristics of omitted respondents supports this explanation; for example, there were slightly higher proportions of women, older people, and people not in the labour force. However, the results are not likely to be affected significantly. Computer-assisted interviewing introduced in January 1994 should eliminate this problem.

² For some respondents, the values for both years of schooling and experience were very high, resulting in an apparent overlap of work and formal education by at least 10 years. While such cases are plausible, they may obscure results for the general population. There were 32 respondents for whom the overlap of school and work was at least 10 years and who had not achieved a doctorate; these cases were deleted from all analyses in this study.

³ Labour Force Survey data prior to 1966 include persons aged 14 and over; thereafter, persons 15 and over are included among the adult population.

⁴ While Mincer's proxy is still used, other indirect measures have been developed to better reflect women's labour force participation (see Kidd and Shannon, 1994).

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Following life events

Ruth Dibbs

Although the main focus of SLID is labour and income information, the survey will contain a wealth of demographic and family history data. This note presents selected results from the preliminary interview, as well as a sampling of the data set, and describes the demographic variables that will be available for longitudinal analysis.

In the January 1993 preliminary interview, information on date of birth, gender, and marital status was supplemented by questions on marital history and children born and raised. These questions are intended to provide data on important life events that have a major and continuing influence on labour market activity, as well as on personal and family well-being. SLID data will show changes in demographic characteristics over the six years of the survey. The background information collected in 1993 will be updated yearly by recording births and deaths, geographic moves, and changes in marital status and household membership, providing ample material for analysis.

Because the values for many demographic variables are affected by the period in which the respondent was born – the

cohort effect – where applicable, results are reported by age groups constructed from respondents' ages as of January 1, 1993.

Selected demographic results

- 70% of women 18 or older have given birth to at least one child, and about 5% have raised or adopted children not born to them.
- 9% of women gave birth to their first child when they were 19 or younger; another 9% of women were 30 or older when they began childbearing, leaving the majority (82%) of first-time mothers aged 20 to 29.
- About 9% of persons who have ever been married have had more than one marriage.
- Almost 6% of the population reported a common-law marital status. Of these, 63% were younger than 35 years. In contrast, only 25% of married persons were under 35.
- In 1980, the average age at first marriage was 25 for men and 24 for women. Ten years later it was 28 for men and 26 for women.
- 84% of the widowed are women, reflecting their longer life expectancy and the fact that many women are younger than their husbands.
- For married persons aged 25 to 34, one-half of the marriages had lasted at least six years; in comparison, one-quarter of common-law unions had lasted that long.
- Because many people from other provinces or countries have moved to British Columbia, over half the residents 25 and over received their basic education elsewhere.

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Description of variables

Marital status and history

Information on marital status, including the starting date of the current status, was collected in 1993. (In the case of divorced persons, the date of separation was obtained.) SLID did not attempt to collect complete marital histories, but did record the date of the first marriage of respondents who had been previously married.

From such information age at first marriage and the duration of both complete and unended spells can be calculated (for example, the length of a widow's marriage and how long she has been widowed). As changes in marital status occur over the six years of the survey, some spells will end and others begin. Age at first marriage and duration of status will be of interest to sociologists and demographers studying marital stability or the relationship between life events and women's work experience and economic situation. The information added during the course of the survey, on the duration, formation and breakup of marriages and common-law unions, will present a picture of marital stability.

SLID's preliminary interview collected respondents' de facto marital status rather than their legal status because it is considered more relevant for labour market and income studies. Interviewers were instructed to read the following question: "What is your marital status? Is it. . . married? common-law? separated? divorced? widowed? single (never married)?" Respondents could select the category that best described their current living arrangements.

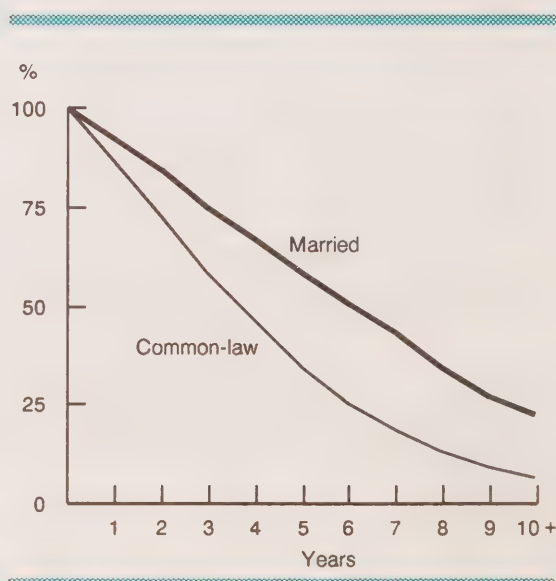
The marital status question and concepts used in SLID differ from those used in other Statistics Canada surveys. For instance, the census asks legal marital status, and whether a person is currently living with a common-law partner. In SLID, individuals who reported "common-law" could legally be from one of the other

categories. Therefore, results cannot be compared exactly to those from other surveys. The common-law estimate of 5.9% in SLID is lower than the 6.7% in the 1991 Census and the 9% (persons 18 and over) reported in the 1990 General Social Survey (GSS). The GSS, with a series of questions on common-law partnerships, was probably most likely to identify all common-law situations.

For the population 25 to 34 marriages in progress in 1993 had lasted longer than common-law unions – 50% of married persons had been in marriages that had lasted at least six years; in comparison, 25% of persons in common-law unions were in relationships that had lasted that long (Chart A). Because the age distribution for persons in common-law unions is slightly younger than for those in marriages, average duration for common-law couples was standardized to the age distribution of married persons. The impact was to reduce the difference in average duration between

Chart A

For persons 25 to 34 in 1993, marriages had lasted longer than common-law unions.



the two groups from 25.3 to 22.5 months; in other words, the age distributions account for 2.8 months of the shorter average duration of common-law unions.

Geographic mobility: short-term and long-term

Each time respondents are contacted, SLID will confirm or update addresses. If there has been a move, each adult household member will be asked the date and reason for the move, either of which may shed light on the factors affecting geographic mobility.

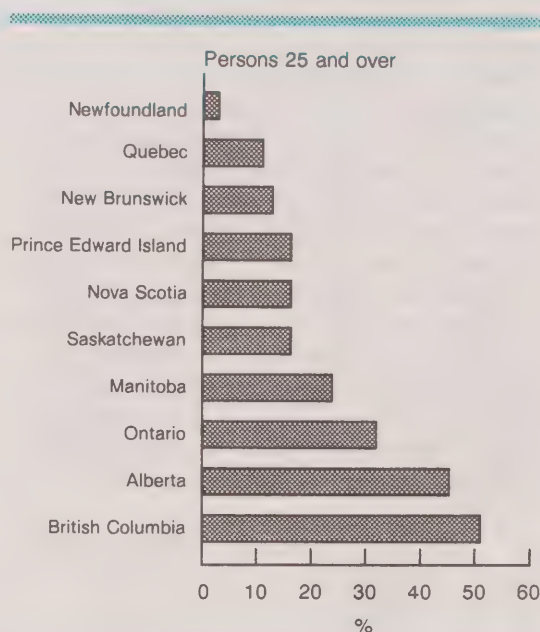
A proxy for long-term immigration and interprovincial migration can be obtained from data on the current province of residence, combined with information on the province in which respondents obtained most of their elementary and secondary education.¹ Such data show, for instance, that in 1993 British Columbia had the highest proportion (51%) of current residents aged 25 or older who had obtained most of their elementary and secondary education in another province or country, followed by Alberta (45%) and Ontario (32%); Newfoundland, with 3%, had the lowest proportion (Chart B). One factor explaining these differences may be the "pull" effect of real or perceived job opportunities in Alberta and Ontario. The proportion for British Columbia is influenced by the large number of persons who choose it for a retirement home. In fact, 66% of persons 60 and over in British Columbia received their basic education elsewhere. The chart does not show the reverse aspect of interprovincial mobility; for example, high out-migration from Newfoundland.

Children born and raised

All females 18 or over provided information on the number of children born, adopted or raised, as well as the year when they gave birth to their first child.² The data will be updated when births are reported or when

Chart B

Over 50% of British Columbia residents in 1993 had received their basic education elsewhere.



adopted, step-, or foster children join the household. Each year the survey will also collect information on the number and ages of children currently living in the household.

Age at birth of first child – potential for longitudinal analysis

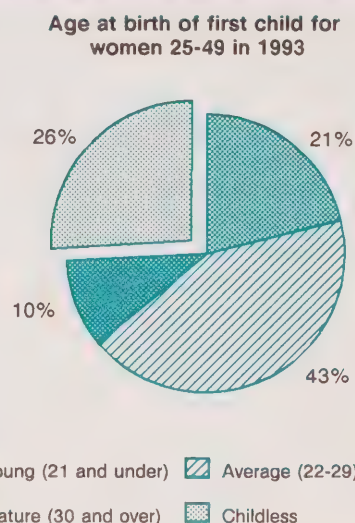
Researchers have established a strong correlation between the age when women began having children and their overall fertility, educational attainment and achievement in the labour market. Women who begin bearing children at an early age tend to achieve lower levels of education (Grindstaff, Balakrishnan and Dewit, 1991). Because formal education is an important factor in the job market, the age at first birth may have a long-term effect on women's socio-economic well-being.

Data from the preliminary interview on schooling and age at birth of first child were analyzed for women aged 25 to 49 in January 1993. This grouping was selected because by age 25 most people have completed their formal education. The cohort effects on level of education and number of children are less for this group than for women 50 and older, and women in this group are most likely to be active in the labour market. For the analysis, four categories were constructed: "young" mothers are defined as those who first gave birth when they were 21 or less; "average" first-time mothers were 22 to 29 at the time of first birth; "mature" first-time mothers, who formed the minority, were 30 and over (Chart C). (Their decision to delay childbirth may indicate a trend worth examining.) The remaining women in the cohort were childless.

The educational attainment patterns show marked differences for these four groups (Table). For example, university degrees are far more common among women who were childless, or who were mature when their first child was born. At the other extreme, nearly 40% of women who were 21 or less at the birth of their first child had not graduated from high school, far above the proportion for the other three groups.

Chart C

Mature first-time mothers were a minority in 1993.



It may be interesting to continue the analysis by examining other attributes such as the measure of lifetime work experience, labour force status and occupation. And, by following the experience of women for six years, it will be possible to evaluate the way early childbearing, delayed childbearing or remaining childless interact with educational attainment, employment and income.

Table

Highest level of education by mothers' age at birth of first child, women aged 25 to 49

	First-time mothers			Childless
	Young 21 or less	Average 22-29	Mature 30 and over	
Average age in 1993	37.7	36.7	38.8	33.3
	%			
Level of education	100	100	100	100
Less than high school graduation	37	15	8	11
High school graduation	21	21	16	15
Some postsecondary education	15	15	16	20
Non-university certificate	25	33	32	27
University certificate or degree	3	15	28	28

Household relationships and families

In 1994, SLID began identifying the relationship between each household member and every other person in the household. This approach will provide more information than the traditional method of relating everyone to a reference person. For example, full details on the relationships in blended and multi-generational families will be available. The longitudinal data set will make it possible to track changes in family composition and family stability.

Although SLID data are collected at the person level, variables at the household and family level are important for analysis. The relationship data will help construct these variables. The data set will contain a large number of family and household attributes associated with each individual (Butlin, 1994), including the type of economic

family, the number of generations in the family, family income and whether the family has experienced a change, such as a new member or a geographic move.

Summary

This note has introduced the demographic information collected in January 1993. Because the background data will be updated each year, life events and their outcomes can be studied; for example, the impact of demographic events on the transitions into and out of the labour market and on the economic situation of individuals and families. Conversely, the labour and income experience tracked in SLID may help to explain certain demographic events, like geographic mobility following a long period of unemployment. □

Notes

¹ Some demographers consider province of education a better indicator of return migration than province of birth. The inclusion of this question in SLID was also motivated by the 1992 report of the Economic Council of Canada, *A Lot to Learn*, which reported large differences in student achievement across the provinces.

² Because of the sensitive nature of the question, it was not asked of females 15 to 17. According to 1991 vital statistics, only 2.1% of babies were born to women under 18.

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Intergenerational change in the education of Canadians

Élaine Fournier, George Butlin and Philip Giles

How does a person's socio-economic status compare with his or her parents'? Traditionally, sociologists have compared occupations when measuring this status. This requires a ranking of the population, including those not in the "mainstream" labour market, whether voluntarily or involuntarily. Changes in the structure of the labour market from one generation to the next must also be considered. But another measure, educational attainment, has the advantage of being strongly linked with occupational rank and is universally applicable. Furthermore, the same scale can be used to measure educational attainment for different generations.

Using data collected in January 1993 as part of SLID's preliminary interview, this article examines the relationship between a person's educational attainment and that of his or her parents by comparing the academic achievements and mobility of different generations.

Educational attainment is a strong predictor of occupational success and income level. For example, in 1993, average income

for persons with a university degree was \$40,247, compared with \$23,644 for those with a high school diploma (Statistics Canada, 1994).

The nature of educational attainment

Some sociologists have argued that academic success or failure is based mainly on individual talent and motivation rather than on factors related to a person's social background (for example, family social class, sex, ethnicity, religion) (Grabbe, 1992). Put in terms of social mobility, a society may be characterized either by a weak linkage between social origin (in this article, parents' education) and personal position (educational attainment), allowing considerable intergenerational movement, or by a strong connection, entailing less movement.

Analysts must be mindful of mobility arising from changes in the population as a whole: "structural mobility." With the expansion in the Canadian educational system that started in the 1950s, there has been a general upgrading of educational levels between generations. Persons born during or after the 1950s are likely to be better educated than their parents' generation, particularly at the postsecondary levels (Pomfret, 1992).

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Against the backdrop of structural mobility, this article looks at "circulation mobility" (Creese, Guppy and Meissner, 1991), movement attributable to factors such as an individual's talent and motivation.

Measuring level of education

Although far more detailed information exists for each respondent, it was aggregated to the same measure as that available for the parents (see *SLID variables related to education*). This educational level variable has five categories: university degree; college or university (with or without a certificate or diploma); high school diploma; secondary; elementary.

The following groups have been excluded from the analysis: respondents who did not have a university degree and are still attending school; those for whom a level of education was not reported; those whose parents' level of education was not reported. People who are still studying but have already reached the highest level of education (that is, university degree) have been included in the analysis; those who have not achieved a university degree and are still studying have been excluded because they may eventually reach a higher level. Respondents without a reported parents' educational level are more likely to be older. Their exclusion from the analysis will slightly bias the measures of mobility upwards since, in

SLID variables related to education

Extensive information on education has been collected about SLID respondents. Questions in the preliminary interview determined years of schooling and any certificates, diplomas or degrees obtained in elementary and high school, university and other postsecondary institutions, such as college. Information gathered includes major field of study and the year any certificate, diploma or degree was received. Subsequently, questions in the annual labour interviews cover similar ground and update the data for each respondent. As well, as part of the preliminary interview, respondents provide information about the educational level attained by each parent. While recognizing the importance of training outside the formal educational system, SLID does not currently collect data on this topic.

general, older respondents have less upward mobility.

Canadians' educational attainment has risen

Generally, Canadians have attained a higher educational level than the previous generation. Just over half the population attended a postsecondary institution; a little over 10% of their parents had (Table 1). Moreover, while 70% of the parents had not graduated from high school, only 30% of their children had not.

Table 1
Educational attainment of Canadians and their parents by sex, 1993

Education	Daughters *	Sons *	Mothers *	Fathers *
	%			
Total	100.0	100.0	100.0	100.0
Elementary	14.3	14.0	49.9	52.1
Secondary	15.1	15.9	20.1	18.8
High school diploma	18.9	15.7	18.3	14.9
College or university	39.4	39.0	8.6	7.0
University degree	12.3	15.4	3.2	7.1

* "Sons" and "daughters" correspond to the Canadian population, so these columns could also be labelled "males" and "females." On the other hand, "mothers" and "fathers" refer to the parents of those aged 15 and over in the Canadian population; some of these people are also part of the Canadian population, some were members of the Canadian population but have since died or moved out of the country, and some were never part of the Canadian population.

Educational attainment varies considerably by age. Two out of three baby boomers (aged 25 to 44) had some postsecondary education, compared with two out of five persons born before the baby boom (45 and over). Compared with baby boomers, proportionately fewer young (15 to 24) people (one in two) had some postsecondary education, but since one-quarter of them do not have a high school diploma, they may have left school temporarily (dropping out is widespread). Age, therefore, has a significant effect on educational level.

Mobility tables¹

The analysis of intergenerational mobility starts with a cross-classification of a respondent's educational level with that of one parent (see *Measuring mobility*); for example, a daughter's educational level and her mother's (Table 2). The shaded diagonal from top left to bottom right refers to cases with *no mobility* (that is, the educational level of daughter and mother are the same). The cells above the diagonal describe *downward mobility* (for example, a mother with a university degree and a daughter with a high school diploma). Each segment to the right of the shaded diagonal represents one step of downward mobility. Similarly, the cells

Measuring mobility

The measure of mobility depends largely on the number of categories used. The higher the number, the lower the likelihood that a person will not move. (In the extreme case, with only one category, there would be no mobility.) In defining the categories, SLID has ranked the educational levels and, by doing so, has made a value judgement. In this article, a person with a university degree is judged to have attained a higher educational level than someone with college or university (but no degree), even though this is not always the case. For example, a person can be certified as an electrician after taking courses and working several years, while another person can obtain a university degree after only three years of university. Moreover, SLID does not take into account "equivalences" in education. For example, in order to teach, a person now requires a university degree, which was not the case previously.

below the diagonal contain cases of *upward mobility*, and each segment to the left represents one step upward. For example, four steps of upward mobility are captured by daughters with a university degree whose mothers had elementary schooling.

The cell values in a mobility table can be aggregated to show the degree of mobility. Table 3 contains these distributions for the four possible parent/child combinations.

Table 2
Mother's and daughter's educational attainment, 1993

Mother's education	Daughter's education					
	Total	University degree	College or university	High school diploma	Secondary	Elementary
Total	100.0	12.2	39.3	19.0	15.2	14.3
University degree	3.1	1.5	1.1	--	--	--
College or university	8.7	2.4	4.5	1.2	0.5	--
High school diploma	18.0	3.4	9.1	3.6	1.5	0.3 *
Secondary	19.8	2.2	8.8	5.2	3.0	0.6
Elementary	50.3	2.6	15.9	8.5	10.0	13.2

* High sampling variance (coefficient of variation between 16.5 % and 25 %); use with caution.

-- Amount too small to be expressed.

Table 3
Steps of intergenerational educational mobility, 1993

Mobility steps	Mother/ daughter	Mother/ son	Father/ daughter	Father/ son
Total	100.0	100.0	100.0	100.0
4 steps up	2.6	3.6	2.6	3.8
3 steps up	18.1	20.1	19.3	20.3
2 steps up	20.8	19.6	20.4	18.3
1 step up	26.7	24.3	23.6	23.5
No mobility	26.0	25.3	26.6	25.9
1 step down	4.5	5.3	5.7	6.1
2 steps down	1.2	1.2	1.3	1.4
3 and 4 steps down	0.2 *	0.5	0.5	0.5

* High sampling variance (coefficient of variation between 16.5% and 25%); use with caution.

Two out of three Canadians exceeded the educational level of their parents ...

Individuals who exceeded their parents' academic achievement very often gained up to three steps. In most cases, the parent had attended elementary school while the child had college or university (no degree). Of those who moved up two steps, slightly less than half had college or university education, while their parents had not graduated from high school. An equivalent proportion received a high school diploma, whereas their parents had only elementary education.

... and fewer than one in ten moved down

Only about 7% of Canadians acquired less education than their parents and most of them dropped just one level. Individuals who moved down in comparison with their fathers most often had attended college or university, while their fathers had obtained a university degree. In contrast, most people who had less schooling than their mothers fit the "secondary" category, while their mothers had graduated from high school.

Since the fathers are slightly more educated than the mothers, the proportion of children who moved down compared with their fathers is a little higher. Logically,

children of parents with the highest educational attainment cannot move up but have to settle for achieving the same level or moving down one or more steps.

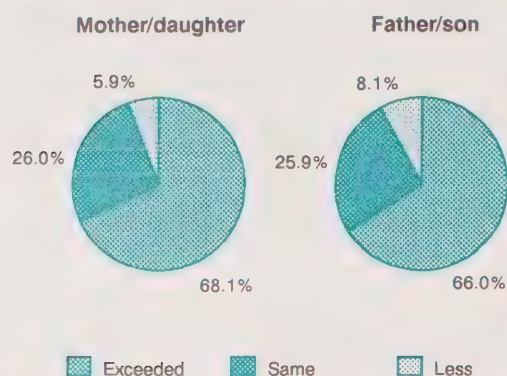
Educational mobility does not depend on the sex of the child or the parent

Traditionally, research into social mobility has focused on the impact of the father's occupation on the son's. If the mother was not in the labour market, she was excluded from the analysis. Yet this study has shown that the mother's education is no less important an influence than the father's on the educational attainment of the child. Intergenerational mobility is similar regardless of the sex of parent or child (Chart A).

As sex is not a significant variable in the analysis of educational mobility, we compared a person's educational attainment with the highest level reached by either the mother or father, rather than looking at each separately. This simplifies the analysis because only one comparison has to be made. However, it has the effect of lowering the apparent achievement of each individual because only the parent with the highest level is considered.

Chart A

Most Canadians exceeded their parents' educational level in 1993.



Overall upgrading does not account for all educational achievement

For the seven out of ten Canadians whose education differed from their parents', SLID has sought to determine what proportion of the change was attributable to overall upgrading of educational levels (structural mobility) and what proportion was due to individual abilities and merit (circulation mobility) (Chart B). For example, in an environment where the distribution of educational levels was identical from one generation to the next, circulation mobility would explain any changes in the child's educational attainment compared with the parent's. Cases of upward mobility and downward mobility would balance each other.

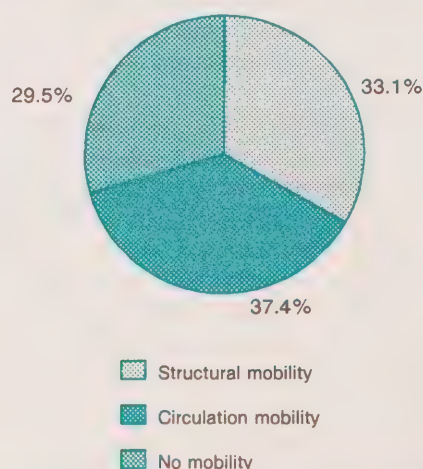
The General Social Survey (GSS) also measured the changes attributable to overall upgrading and to individual abilities and merit, using their 1986 data (see *Structural mobility and circulation mobility*). By comparing an individual's educational attainment with that of the parent who reached the highest level, SLID found that structural mobility was 33% and circulation mobility was 37%; 30% of the population remained at

the level of the previous generation. If persons who did not move were excluded, structural mobility accounted for just under half the increase in educational attainment and circulation mobility accounted for the remainder. These results suggest that the improved educational attainment of persons from disadvantaged backgrounds need not be linked solely to the general increase in educational attainment.

A calculation of mobility for each parent/child combination in this study yielded results comparable to the GSS. For the mother/son combination, however, the results were different, with much greater structural mobility observed by SLID than by the GSS. The latter calculated mobility using six educational levels, while SLID used only five. This probably affects the results, since the higher the number of categories, the greater the chances of movement.

Chart B

Movement is attributable as much to individual factors as to overall population changes.



Structural mobility and circulation mobility

Structural mobility refers to changes linked to the general increase in the educational level of the population, whereas circulation mobility results from individual effort. To calculate these two types of mobility, SLID used the same definitions as the 1986 GSS. To measure the effect of structural mobility, an index of dissimilarity was calculated. This index, expressed as a percentage, reflects the difference between two distributions; in this case, the educational level of daughters and their mothers (Table 2). Structural mobility is one half of the absolute difference between the percentages in the two univariate distributions for each educational level (Creese, Guppy and Meissner, 1991). An index of 0% would mean that the two univariate distributions are identical, whereas an index of 100% would mean that they are extremely different. In this case, structural mobility is 41%. If the proportion of cases with no mobility (the sum of the shaded cells in the table, i.e., 26%) and the proportion of structural mobility (expressed by the index) are subtracted from 100%, a proportion of 33% for circulation mobility is obtained. This figure corresponds to all other movements in the table.

Parents' postsecondary education makes a difference

The figures for postsecondary attainment range from just over 40% for Canadians whose parents did not complete secondary school, to 65% for children of high school graduates, to almost 80% for those whose parents had a postsecondary education (Chart C).

Individuals under age 40 moved down more often than other Canadians

It was relatively easy for most Canadians to attain if not exceed their parents' educational level, since 62% of all parents did not graduate from high school. However, for individuals under age 40, it was less easy to surpass their parents' level, which was higher than that of parents of individuals aged 65 and over. In fact, the proportion of parents with postsecondary education ranges

from 11% for parents of individuals aged 65 and over to more than 25% for parents of individuals under 40.

Moreover, almost 70% of the parents of Canadians aged 65 and over had only an elementary education, so it was difficult for their children to move down by comparison. Thus, 44% of individuals aged 65 and over attained the same educational level as their parents (elementary in 80% of cases). Still, 46% achieved a higher level than their parents. A large proportion of these persons are in the "secondary" category, one step above their parents' elementary level, and an almost equally large proportion are in the "college or university" category, three steps above their parents' elementary education. Most individuals in the 40 to 64 age group are also in the latter category (Table 4).

Chart C

The likelihood of studying at the postsecondary level is greater if one of the parents has a postsecondary education.

% of children with postsecondary education

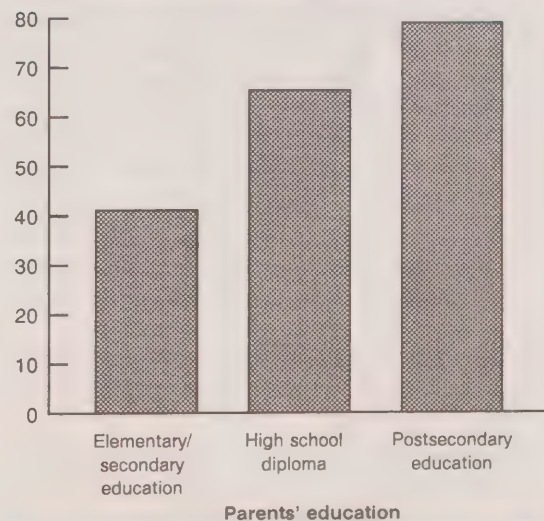


Table 4
Educational attainment of Canadians in comparison with their parents

	Total	Higher	Same	Lower
15-39	100.0	60.1	26.2	13.7
40-64	100.0	63.9	27.3	8.8
65 and over	100.0	46.1	44.1	9.8

Conclusion

The increase in Canadians' educational level is not merely the result of structural changes in the education system but also depends on

each individual's abilities and merit. However, there is a link between the parents' educational level and that of their children. Children have a much greater chance of studying at the postsecondary level if one of the parents has a postsecondary education. Contrary to the belief that the father's educational level has a greater impact on the children's education, this study reveals that the mother's educational attainment is probably equally important. □

Note

¹ This section applies methods drawn from Creese, Guppy and Meissner, 1991.

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SLID employment equity data

Ruth Dibbs

In 1986, the federal government enacted the Employment Equity Act to achieve equality of employment opportunity in areas under federal jurisdiction for four groups: women, visible minorities ("persons, who are, because of their race or colour in a visible minority in Canada"), Aboriginal peoples and persons with disabilities. The aim of the Act is to ensure that ability and qualifications are the sole criteria for employment opportunities, benefits and advancement (Cardillo, 1993).

To implement and monitor this objective, reliable statistics are needed on the counts and qualifications of the designated groups at national, provincial and sub-provincial levels. The sources of these statistics, known as employment equity data, are the Census of Population and Housing and the post-censal Health and Activity Limitation Survey (HALS). While the census and HALS are the definitive sources for identifying the designated groups and providing benchmark data, the information they offer is essentially a series of "snapshots." The Survey of Labour and Income Dynamics (SLID), on the other hand, returns to the same people annually for six years. It can thus provide a better understanding of many employment equity issues. For example, do members of the designated groups experience

higher job turnover rates? Do they experience longer periods of unemployment than the general population, or lower promotion rates? Or do they have stable patterns of employment? The answers to these and other questions can help in evaluating the effectiveness of policies designed to improve the position of the employment equity groups.

The preliminary interview in January 1993 collected background information on personal characteristics that are relevant to labour force activity and economic well-being. This included questions to identify the visible minority population and Aboriginal peoples for research on employment equity issues. (Persons with disabilities will be identified annually by questions asked in the January labour interview.)

This note explains how SLID collected information on visible minorities and Aboriginal peoples, and compares the estimates to those obtained by the 1991 Census. It also presents some basic results from the 1993 interview and suggests how the data may be used in future analyses.

Identifying visible minorities and Aboriginal persons

The preliminary interview was designed to make SLID identification of the designated groups as comparable as possible to the census. Questions were developed in consultation with data users. Like the 1991 Census, SLID uses questions on ethnicity,

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(see *SLID's ethnicity question*), country of birth and mother tongue to identify visible minorities. Certain changes from the census ethnicity question reflect SLID's interview collection method.

Also, following the 1991 Census model, interviewers asked, "Is this person a registered Indian as defined by the Indian Act of Canada?", to identify Aboriginal persons who may not have reported an Aboriginal ethnic background; for example, persons who were married to a registered Indian.

The definition of the visible minority group followed the procedures of the Interdepartmental Working Group on Employment Equity Data.¹ The ethnic background question identified 91% of this group. Another 7% were identified by country of birth, while questions about mother tongue (1%) and ethnic background and country of birth combined (1%) accounted for the remainder. Most Aboriginal peoples (94%) were identified by the ethnic background question, and 6% solely through the question about registration under the Indian Act. These percentages were very close to those identified by comparable questions in the census (see *Quality issues*).

Counts and characteristics

SLID estimated that 7.7% of the population aged 15 and over in the 10 provinces, 1.7 million people, are in a visible minority, compared with the 8.8% obtained by the 1991 Census. The SLID estimate of off-reserve Aboriginal peoples aged 15 and over in the 10 provinces was 539,000, compared with 509,000 for the census. Some differences can be expected. The census relies on self-enumeration, whereas SLID data come from an interviewer-administered questionnaire (mainly telephone interviews). The size and design of the SLID sample may also account for discrepancies. With these factors taken into account, the differences in counts between the two sources are small.

SLID's ethnicity question

Interviewers spoke only the text in capital letters (that is, categories were not read to respondents).

CANADIANS COME FROM MANY ETHNIC, CULTURAL AND RACIAL BACKGROUNDS; FOR EXAMPLE, ENGLISH, FRENCH, NORTH AMERICAN INDIAN, CHINESE, BLACK, FILIPINO OR LEBANESE. WHAT IS ...'S BACKGROUND? (*If Indian, probe for North American or East.*)

Mark all that apply

English	Dutch (Netherlands)
French	Jewish
German	Polish
Scottish	Black
Italian	Métis
Irish	Inuit/Eskimo
Ukrainian	North American Indian
Chinese	East Indian
Canadian (<i>Probe for any other background</i>)	
Other - Specify	(space for two write-ins)

Quality issues

Because visible minorities and Aboriginal peoples represent fairly small proportions of the total Canadian population, the absolute numbers in the SLID sample of 15,000 households are small. Those with visible minority origins numbered 1,106, and Aboriginal peoples totalled 859. Moreover, the Labour Force Survey sample, which is the base for SLID, is designed to optimize labour force, not ethnic characteristics. Analyses using cross-tabulations of characteristics should generally be done at the Canada level only. Multivariate analysis is recommended to study the effect of designated group membership on labour market states and transitions.

The values for the designated groups include an unknown category of 2.6% for visible minorities and 4% for Aboriginal persons. These resulted mainly from non-response to all the ethno-cultural questions; there was no imputation of these characteristics.

The cases with unknown values have been analyzed in terms of age, sex and labour force status. For Aboriginal peoples, the "Unknowns" were disproportionately males (58%). Otherwise, the characteristics for the unknown categories are very close to the proportions of the general population. Hence, it is reasonable to assume that the "Unknowns" were distributed in the same proportions as the total population and that their impact on the counts for the two designated groups would be negligible. Unknown values have been excluded from the analysis.

Those interested in using SLID data to study equity issues will have access to a broad range of characteristics; relevant background data for visible minorities include immigrant status, year of immigration and age at time of immigration. For both designated groups, SLID's information includes educational attainment, major field of study and lifetime work experience. Despite some differences in the counts, the results for SLID and the census are comparable for characteristics that have been studied to date. For example, the two sources yield a similar age structure for the groups (Table 1).² According to both SLID and the census, 49% of visible minorities were younger than 35; SLID's estimate of the same age group for Aboriginal peoples was 56%, compared with 59% from the census. Both employment equity groups have a much younger age profile than the total adult population, which may have an impact on their labour market activity.

Labour market activity³

Because the labour force data from SLID and the 1991 Census were collected in different periods (January 1993 and June 1991),

reflecting seasonal variations and changing economic conditions, the findings of the two sources differ slightly (Table 2). For instance, there are discrepancies in the participation rates of the total population and Aboriginal peoples, and in the unemployment rates for visible minorities. On the other hand, the participation rate of visible minorities is very close in the two sources, as is the unemployment rate of off-reserve Aboriginal peoples. The labour market characteristics from SLID provide a good starting point for measuring change over the next six years.

Looking ahead

SLID data will permit analysis of the dynamic aspects of the economic situation of visible minorities and Aboriginal peoples. For example, how long was the spell of unemployment for those who were unemployed at the start of the survey? What happens after job loss? How long do people search for new jobs? If not successful, do they get more training or move? Do other family members enter the labour market? Are visible minorities and Aboriginal peoples facing barriers to re-employment not related to education and experience?

Table 1
Age structure, SLID and 1991 Census

	Total population		Visible minorities		Aboriginal peoples	
	SLID	Census	SLID	Census	SLID	Census
	%					
Age groups						
Total	100	100	100	100	100	100
15-24 years	17	18	23	22	28	29
25-34 years	22	23	26	27	28	30
35-44 years	21	20	23	23	21	21
45-54 years	15	14	13	13	13	10
55 years and over	25	26	15	15	10	9

Table 2
Participation and unemployment rates, SLID and 1991 Census

	Participation rate	Unemployment rate *
	%	
Total population		
SLID, January 1993	69.9	11.2
Census, June 1991	67.9	10.1
Visible minorities		
SLID, January 1993	70.3	16.4
Census, June 1991	70.5	13.1
Off-reserve Aboriginal peoples		
SLID, January 1993	64.6	17.7
Census, June 1991	68.4	17.4

* not seasonally adjusted

Knowing what happens to the same people over time can give an understanding of social and labour market processes. The time dimension in SLID will enhance the

study of the determinants of labour market inequalities and the mechanisms of change for the employment equity designated groups. □

Notes

¹ SLID used a slightly simplified algorithm to distinguish subgroups of visible minorities because there was no question on religion (as there was in the 1991 Census). Because of the small sample size, SLID did not create a "Multiples" subgroup, for instance, for persons who reported a combination such as Chinese and Korean.

² Special tabulations for visible minorities and Aboriginal peoples were provided by the Employment Equity Data Program, Housing, Family and Social Statistics Division, Statistics Canada.

³ **Labour force** refers to persons employed or unemployed in the reference week before the census or survey (SLID, persons aged 15 to 69; census, persons aged 15 and over). **Participation rate** is the labour force as a proportion of the population aged 15 to 69 (SLID) or aged 15 and over (census). **Unemployment rate** refers to unemployed persons as a proportion of the labour force.

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The wage gap between men and women : An update

David Coish and Alison Hale

Most research into gender difference in earnings reveals a wide gap that is narrowing over time. Typically, most of the gap is unexplained, even with controls for differences in demographic, educational and other factors.

Yet a recent Statistics Canada release (Wannell and Caron, 1994) suggests that 1990 female university graduates have a higher hourly wage than their male counterparts two years after graduation. This finding takes into account hours worked, experience, education and tenure, and looks at both full- and part-time earners.

One might be tempted, then, to dismiss gender wage differentials as a "non-issue" or problem of the past. But this recent study prompts several additional questions. Does the situation for female university graduates reflect an improvement for women in general? Presuming that a wage gap persists in the labour force at large, is it explained by human capital differences (for example, years of work experience, years of education, major field of study) and demographics (age, marital status, province of residence)? In this regard, SLID's

information on years of work experience is valuable since it is rarely captured by surveys.

This study looks at the hourly wage gap between men and women aged 15 to 69, and employed in January 1993. It attempts to explain the gap by a number of human capital and demographic characteristics, and looks at residual factors requiring explanation.

Other studies

Previous studies on the earnings of men and women provide a backdrop to this analysis but there are important differences among them. For example, some examine annual earnings, others hourly wage rates. Some look at specific subpopulations such as university graduates, instead of all workers. Labour market and demographic variables differ across studies, as do time periods. So it is not surprising that results vary from study to study. To put the present analysis into context, some recent research is considered below.

In 1994, Christofides and Swidinsky used 1989 Labour Market Activity Survey (LMAS) data to examine wage differentials among the employed (excluding students). They found that less than 30% of the difference between each combination of gender and visible minority status was explained by productivity factors: "[the]

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unexplained residuals [were] conventionally attributed to labour market discrimination" (Christofides and Swidinsky, 1994: 35). Productivity factors included demographics, human capital, occupation and industry.

Wannell and Caron's 1994 study examined earnings differentials for 1982, 1986 and 1990 postsecondary graduates using National Graduates Survey data. The study uncovered an earnings gap between male and female graduates working full time at the time of the survey. This was true for both university and community college graduates with similar education, work experience, and age profiles. However, once length of time at current job and hours of work had been accounted for, and all earners had been considered, 1990 female university graduates actually had a higher hourly wage in 1992 than male graduates. For community college graduates, a 3.5% difference favouring men remained. The control for hours worked was implemented after it was discovered that women employed full-time worked, on average, three hours less than men if they were university graduates; four hours less if community college graduates.

An earlier analysis by Wannell (1989) looked at 1982 graduates two and five years after graduation. A gap between men and women with similar education, work experience, field of study, and degree level existed among university and community college graduates. This study did not consider hours worked or tenure. Differences in human capital and demographic characteristics accounted for only one-third of the earnings gap for university graduates, and one-fifth for community college graduates. Gender differences in major field of study contributed most to the earnings differential. Like the 1994 study, this model included an indicator of public sector employment to assess the impact of target group programs and the stated merit principle of hiring and advancement. They tended to be an equalizing factor.

Finally, Morissette (1991) found that larger firms, on average, paid higher wages, yet the probability of working for a larger firm was lower for women than for men. Even when observable characteristics of workers, occupation and industry were controlled, the wage gap between large and small firms was greater than 20%. Hence, structural barriers to women's entry into large firms may be at the root of some of the wage discrepancy.

Results from these studies tend to support the conclusion that women are in a disadvantaged position in the labour force. Wannell and Caron's study proves the exception. This prompts a close look at SLID results – do they show that working women received lower wages than men in 1993?

On average, men make \$3.64 more per hour than women

The average hourly wage for those employed full- or part-time in January 1993 was \$13.23 for women and \$16.87 for men. This .78 female-male ratio compares with Christofides and Swidinsky's 1989 ratio of .77, restricted to white women and white men. Hourly wages for all full-year, full-time workers in 1992 were \$14.55 and \$18.38, respectively, producing a marginally higher ratio of .79.

When annual earnings are used, ratios are lower because women are much more likely to work part time and part year. To control for this, female-to-male annual earnings ratios are restricted to full-time, full-year workers. Survey of Consumer Finances data reveal a female-to-male annual earnings ratio of .72 in 1992 for full-time, full-year workers, up from .70 in 1991, and .64 in 1982 (Statistics Canada, 1994a). What has contributed to these rising ratios?

Women's labour force participation rose from 1982 to 1992, while men's fell (Table). In 1992, women constituted 45% of those employed (Statistics Canada, 1994c).

The proportion of women with university degrees also increased during this period (Statistics Canada, 1989; 1993). While men are still more likely to have a degree, women now account for over one-half of university degrees granted (Statistics Canada, 1994b). Continuation of this trend will further shrink the education gap.

Table
Selected Trends

	Men	Women
	%	
Participation rates		
1982	77.0	51.7
1992	73.8	57.6
With university degrees		
1982	10.8	7.0
1992	13.3	10.4

Source: Labour Force Survey

With rising education and labour force participation, as well as fewer children in the home, women are approaching the human capital levels of their male cohorts. As they approach parity, do unexplained factors (including discrimination) account for a growing share of the shrinking wage gap?

Course of study makes a difference to earnings

A few key characteristics are shown to be significantly related to lower wages for each sex. Youth (under 35) and mature working age (55 to 69); single status; residence in Quebec and the Atlantic and Prairie provinces; visible minority status; low level of schooling; and little work experience are all linked to lower wages for men. For women, the characteristics are youth (under 25), single status, residence in Quebec and the Atlantic and Prairie provinces, a low level of schooling, and little work experience.

At the other extreme, higher wages for men are associated with higher levels of schooling and a degree in the physical

sciences (including engineering) or commerce. Important traits for women are higher levels of schooling and a university degree in all fields other than social sciences, or a community college diploma in health.¹

A hypothetical profile of two individuals with different characteristics illustrates the results of the analysis. A single woman aged 56, residing in Quebec, not a visible minority, with 16 years of schooling and 29 years of work experience, having studied commerce in university, and whose parents have both completed high school, has an expected hourly wage of \$18.32. For a man in comparable circumstances, the predicted wage is \$19.86. Thus the female-to-male wage ratio is .92.

Methodology

A weighted least squares regression was run for each sex. The natural log of the hourly wage rate is the dependent variable. A consequence of the use of the logarithm is minimization of the impact of extreme upper values. In addition, hourly wages above \$100 were excluded.

The analysis was restricted to those employed at the time of the survey. All employees were included; a full-year, full-time restriction was not necessary because hourly wage, not annual earnings, was examined. In all, data for 11,685 individuals were used.

The independent demographic and human capital variables initially chosen were age, province of residence, marital status, mother tongue, visible minority status, years of schooling, major field of study (university), major field (non-university), mother's level of education, father's level of education, and years of work experience. The latter is not usually captured by surveys and is a welcome addition to the study of gender wage differentials.

Chi-squared tests were done to determine whether the relationship of each independent variable to wage was significant at the 5% level. This was the case for all except mother tongue, so this variable was dropped. All remaining variables were significant at the .01 level.

Small cell counts required collapsing of certain categories, based on similarities in mean wage across groups.

Another woman from Quebec, not a visible minority, aged 22, with only seven years of schooling and four years of work experience, has a predicted wage of \$5.88 versus \$8.19 for a man in similar circumstances (.72 ratio).

Little of the wage gap is explained

A statistical technique known as "decomposition" breaks the wage gap into an explained and a residual, or unexplained, component (see *Decomposition*). The former is the amount of the wage gap explained by human capital and demographic differences between men and women.

The unexplained portion is split into two parts: "male advantage" and "female disadvantage." The former gives the proportion of the wage gap resulting from rewards unrelated to men's characteristics and accomplishments; the latter reveals lower than expected returns for women's traits.

Only a small proportion of the wage gap is "explained" by differences in characteristics (12%). In fact, \$3.21 of the \$3.64 hourly wage gap (88%) remains unexplained by factors such as differences in work experience, education, or demographic characteristics. If there were no unexplained component, the female-male ratio would be .97. Instead, it is .78.

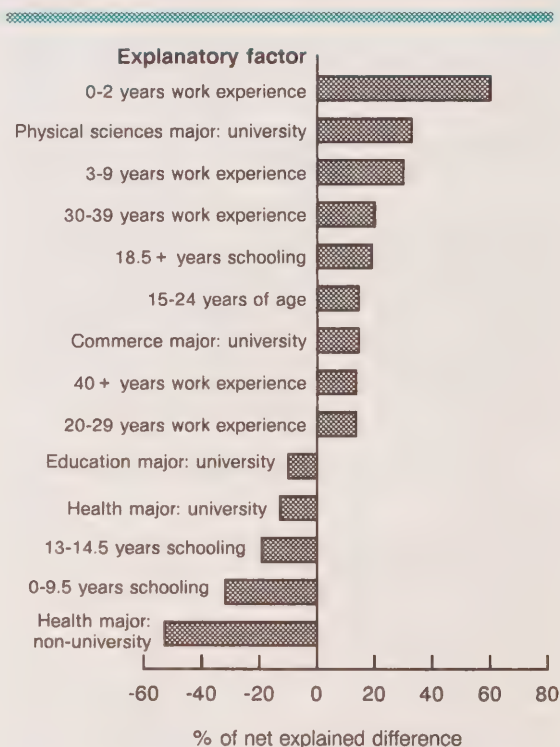
The portion of the wage gap explained in this study is notably lower than others. Christofides and Swidinsky's model explained 27% of the wage difference between white men and white women. These authors included occupation, industry, and firm size in their model. In Wannell's 1989 study of the more homogeneous graduate population, the explained portion ranged from 18% for community college, to 35% for university graduates. Wannell and Caron's 1994 study explained the entire wage gap for university graduates by differences in human capital, controlling for hours worked and tenure, and including all earners. In

contrast, community college graduates continued to have low proportions of the gap explained.

Among the various human capital and demographic factors widening the wage gap in the SLID analysis, the most important is a low level of work experience (two years or less) (Chart). A large proportion of women have a low level of experience, coupled with lower wages.

Chart

A college diploma in health significantly narrows the explained portion of the wage gap.



Women who have completed a college program in health are likely to enjoy relatively high earnings for non-university graduates. Because women are 10 times more likely than men to have this major, this diploma contributes most to the narrowing of the explained earnings gap.

Among university graduates, high wages are associated with the physical sciences, including engineering. The proportion of men with such degrees is almost three times that of women. However, the prevalence of women with university degrees in education and health, both providing high remuneration, narrows the gap.

The larger proportion of women in the lower earning age group (15 to 24), increases the difference. But, because many men have either many years of schooling (18.5 or more), which is positively correlated with high earnings, or few (9.5 years or less), their educational attainment has polarized influences on the wage gap.

What is unexplained?

Almost 90% of the total wage gap is unaccounted for by measured human capital and demographic differences between men and women. Of this, male advantage and

female disadvantage account for almost equal proportions (45% and 43%, respectively). There is a larger portion of women than men in the lower earning levels of work experience (three to nine years). However, while men with three to nine years' experience also make less money than their more experienced counterparts, the difference is not as pronounced as for women. This unexplained difference in remuneration for equal work experience contributes to a widening of the gap.

The relationship between age groups and wage is also different for the sexes. Men aged 25 to 34 are much more likely to have lower wages than men aged 35 to 54, while women in the younger cohort are only slightly more likely to have lower wages than women in the next group. Although a positive relationship between age and wage exists for both sexes until the 55-to-69 cohort, the relationship is less marked for females.

Decomposition

The decomposition model can be stated as:

$$\ln w_m - \ln w_f = B(\bar{x}_m - \bar{x}_f) + \bar{x}_m(b_m - B) + \bar{x}_f(B - b_f)$$

Where:

- w = mean wage for males (w_m) and females (w_f)
- \bar{x} = vector of characteristics (explanatory variables) for males and females
- B = vector of estimated regression coefficients weighted by male and female proportions for study population = $p_m b_m + p_f b_f$
- $B(\bar{x}_m - \bar{x}_f)$ = explained component
- $\bar{x}_m(b_m - B) + \bar{x}_f(B - b_f)$ = unexplained component consisting of:
 - $\bar{x}_m(b_m - B)$ = male advantage
 - $\bar{x}_f(B - b_f)$ = female disadvantage

The left side of the equation is the difference between the natural log of the mean wage of males and that of females. On the right, the first term, $B(\bar{x}_m - \bar{x}_f)$ gives the portion of the wage differential that is due to differences in human capital and demographic characteristics between men and women. For example, if a higher proportion of men graduate from university with degrees in high earning fields, the "explained" component of the wage gap increases. A high proportion of women in low wage fields also increases the explained part. However, high proportions of women in high wage fields, and high proportions of men in low wage fields, reduce the explained component.

The last two terms together represent the portion of the wage gap that is not explained by human capital and demographic differences. The first of these two terms is the "male advantage," or portion of the wage gap reflecting returns for males beyond that expected based on human capital and demographics alone. The last term represents the female disadvantage, or returns below those expected.

This undoubtedly reflects strong recent educational gains by younger cohorts of women. Hence, the advantage of greater years of work experience for older cohorts is offset by the better educational profile for younger women. This is more pronounced for women because their recent educational gains have been stronger than men's.

Being single is a stronger negative wage predictor for men than for women, and the proportion of singles is slightly greater among men. Christofides and Swidinsky found that marital status was the "most important element of the unexplained component in the white male-white female comparison" (Christofides and Swidinsky, 1994: 45). Although important here, it is not the most important influence.

Summary

In January 1993, the female-male wage ratio was .78. Several factors, some common to both sexes and others specific to each, are significant predictors of lower or higher wages. Low levels of work experience, youth, being single, few years of schooling, and residence in Quebec and the Atlantic or Prairie provinces, are factors contributing to lower wages for both men and women. For both, high levels of schooling lead to higher wages as does a university degree in the physical sciences or commerce. Factors associated with lower wages for men only are

belonging to a visible minority and being of mature working age. For women, having a university degree in any field other than social sciences, or a community college diploma in health, leads to higher wages.

Overall, human capital and demographic differences between the sexes account for only 12% of the wage gap. The remainder, or unexplained portion, is due to unmeasured factors, one of which may be systemic discrimination.

Future directions

Future studies of the wage gap could consider the effect of having children, and the age of the youngest child. Although these can be viewed as proxy measures for work experience, they may also exhibit independent influences. A similar study could be done with controls for occupation and industry, and for part-time and full-time status.

Upcoming data on supervisory and managerial responsibilities from SLID's 1994 labour interview will enable further analysis of several gender occupational differences. For instance, have women achieved equal representation in management and supervisory functions? Are they concentrated in lower management positions? Who is receiving an opportunity to manage or supervise? Finally, what is the eventual impact of such opportunities on wages and promotions? ☐

Note

¹ R-squared values are .41 for men and .33 for women. (Without the work experience variable the values are somewhat lower at .39 for men and .30 for women.) This compares with Wannell's 1989 findings of .30 for male university graduates, and .08 for male community college graduates employed full-time five years after graduation, and .29 and .31 for employed female graduates. In Christofides and Swidinsky's analysis, which included occupation and industry, the values were .42 and .45 for white men and white women, respectively. An r-squared value is an indicator of goodness of fit of the model specified. The higher the value (up to 1.0), the better the fit between wage and the human capital and demographic variables selected.

When public sector employment (including government service, educational service and hospitals) is added to the regression, results suggest that it is more advantageous for women to be employed in the public sector than for men. This variable becomes the most significant for women with a .31 b-coefficient, while the .16 value for men is also significant. The model also fits better with r-squared values of .38 for women and .42 for men.

Controls for occupation and industry, including the public sector variable, however, are excluded from further analysis. Occupation and industry are not human capital or demographic variables, and their inclusion may mask earnings discrimination because of a matching process of workers and jobs that is conditioned by gender (Wannell, 1989).

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Appendix: SLID Research Papers

92-01A

Content of the Survey of Labour and Income Dynamics: Part A – Demographic and Labour Content

Garnett Picot, Susan Poulin, Richard Veevers, Brian Biggs

92-01B

Content of the Survey of Labour and Income Dynamics: Part B – Income and Wealth Content

Garnett Picot, Susan Poulin, Philip Giles, Mary Allen

92-02

Survey of Labour and Income Dynamics: Possible Interview Dates

Maryanne Webber

92-03

Sample Rotation for the Survey of Labour and Income Dynamics

Sylvie Michaud, Lecily Hunter, Georges Lemaître

92-04

The Measurement of Job Search and Unemployment in a Retrospective Setting

Georges Lemaître

92-05

Dealing with the Seam Problem for the Survey of Labour and Income Dynamics

Georges Lemaître

92-06

Labour Force Classification in SLID

Maryanne Webber, Georges Lemaître

92-07

Objectives and Content of the Preliminary Interview

Alison Hale, Debbie Lutz

92-08

Self/Proxy Respondent Rules and Data Quality

Brian Biggs

92-09

Focus Groups with Respondents and Non-respondents to the Survey of Consumer Finances

Nancy Staisey

93-01

The Use of Income Tax Data for SLID

Susan Poulin

93-02

SLID Labour Interview "Questionnaire" – January 1993

Mary Allen, François Simard

93-03A

SLID Microdata Files (Part A: Overview)

Jamie Brunet, Philip Giles

93-03B

SLID Microdata Files (Part B: Detailed Specifications)

Jamie Brunet, Philip Giles

93-04

SLID Income Interview – May 1993 Questionnaire and Data Collection Procedures

Philip Giles

93-05

Summary of Observations: Head Office Observers and Interviewers – January 1993 Test

Dahna Deslauriers, Ruth Dibbs, Michael Egan, Alison Hale, Sylvie Michaud

93-06

SLID Preliminary Interview – January 1993 Interviewer Debriefing Summary

Dahna Deslauriers

93-07

Qualitative Aspects of SLID Test 3A Data Collection

Sylvie Michaud, Christel Le Petit, Mylène Lavigne

93-08

Questionnaire Design in a Paperless Society

Ruth Dibbs, Alison Hale

93-09

SLID Content Evaluation – The Authority Series: Supervision and Management

David Coish

93-10

Activity Limitation Questions in SLID – Results from the January 1993 Test

Yves Saint-Pierre

93-11

Qualitative Aspects of SLID Test 3B Data Collection

Sylvie Michaud, Mylène Lavigne, Jacqueline Pottle

93-12

Summary of Observations: Head Office Observers and Interviewers – May 1993 Test
Dahna Deslauriers, Mary Allen

93-13

Questions Relating to Social Support: Results from the SLID January 1993 Test
Yves Saint-Pierre

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Labour Force Classification in SLID: Evaluation of Test 3A Results
Doug Hiemstra, Mylène Lavigne, Maryanne Webber

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SLID Test 3B Results: Income Sources
Élaine Fournier, Chantal Grondin, Tracey Leesti

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SLID Test 3B Results: Impact of Notebook
Élaine Fournier, Debbie Lutz

93-17

SLID Test 3B Results: Assets and Debts (Wealth)
Sylvie Michaud, Maryanne Webber, Heather Lathe

93-18

Adding New Members into a Longitudinal Panel Survey of Households and Individuals:
Simulations
Bernard Gailly, Pierre Lavallée

93-19

Sample Representativeness for the Survey of Labour and Income Dynamics
Pierre Lavallée

94-01

SLID Following Rules: Whom to Trace and Whom to Interview
Sylvie Michaud, Yves Saint-Pierre

94-02

Respondent Relations in Longitudinal Surveys
Debbie Lutz

94-03

Results of the Income Permission Question from the August 1993 Test
Tom Greenberg

94-04

Social and Labour Market Policy Research Using the Survey of Labour and Income Dynamics
Maryanne Webber

94-05

SLID Labour Interview Questionnaire – February 1994
David Coish, Alison Hale, Cindy Heffernan

94-06

SLID Household and Family Variables

George Butlin

94-07

The Survey of Labour and Income Dynamics: Lessons Learned in Testing

Maryanne Webber

94-08

Questionnaire and Collection Procedures for SLID Income Data Collection – May 1994

Élaine Fournier, Susan Poulin

94-09

SLID Questionnaire for Demographics and Contact: 1994

Ruth Dibbs, Bob Loverock, Alison Hale

94-10

1994 Preliminary Interview Questionnaire

Alison Hale, Debbie Lutz, Mike Brulé

94-11

The Use of Tax File Data in the Survey of Labour and Income Dynamics: Summary Report

Ruth Dibbs, Susan Poulin, Maryanne Webber

94-12

1994 SLID Income Interview: Observation and Debriefing Report

Élaine Fournier, Helen Smith

94-13

Calculation of Family Income for SLID

Philip Giles, Sylvie Michaud, Chantal Grondin

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Confidentiality of SLID Microdata: General Approach

Pierre Lavallée, Chantal Grondin

94-15

Data Quality of Income Data Using Computer-Assisted Interviewing: SLID Experience

Chantal Grondin, Sylvie Michaud

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Measuring Non-response in a Longitudinal Survey: The Experience of SLID

Sylvie Michaud, Maryanne Webber

94-17

Measurement Issues in the Reporting of Unemployment Insurance

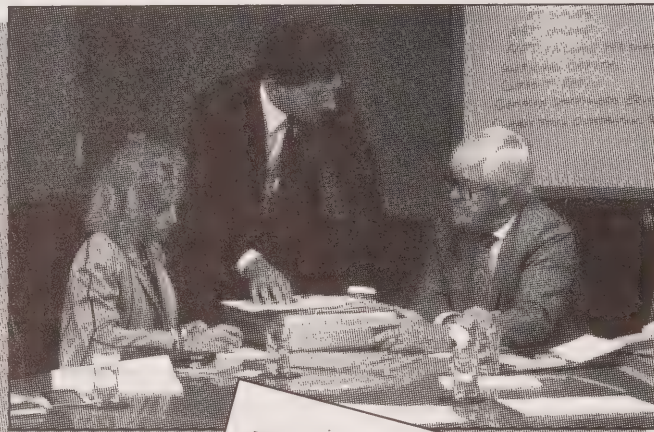
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SLID Derived Variables: Demographic, Cultural and Geographic

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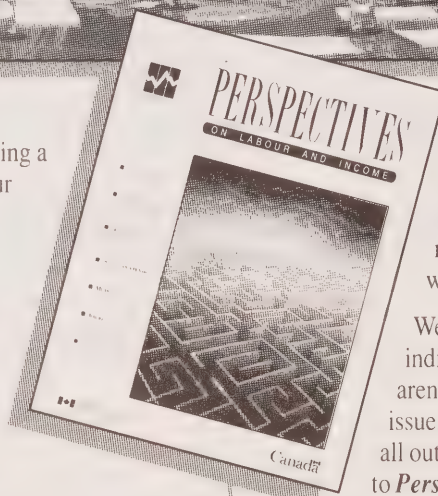
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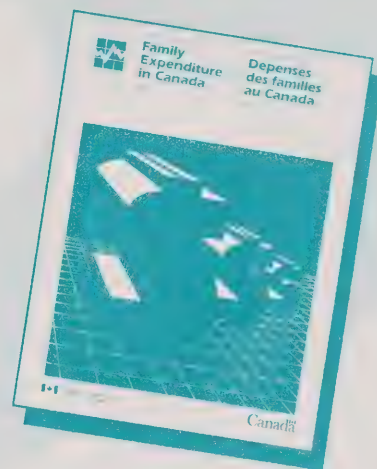
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